Clean Copy of Claims, as Amended in the Response to Restriction Requirement and Preliminary Amendment

25. (Amended) A method of determining whether a test composition is useful for alleviating a bone-related disorder, the method comprising:

maintaining a cell which comprises a biologically active MRR protein in the presence of the test composition and

comparing i) an activity of the MRR protein of the cell maintained in the presence of the test composition and

ii) the same activity of the MRR protein of a cell of the same type maintained in the absence of the test composition,

wherein a difference between

i) an activity of the MRR protein of the cell maintained in the presence of the test composition and

ii) the same activity of the MRR protein of the cell of the same type maintained in the absence of the test composition

is an indication that the test composition is useful for alleviating a bone-related disorder.

26. (Amended) The method of claim 25, wherein the bone-related disorder is osteoporosis.

57. (New) The method of claim 25, wherein the bone-related disorder is Paget's disease.

58. (New) The method of claim 25, wherein the bone-related disorder is hyperthyroidism.

59. (New) The method of claim 25, wherein the bone-related disorder is hyperparathyroidism.

60. (New) The method of claim 25, wherein the bone-related disorder is osteomalacia.

61. (New) The method of claim 25, wherein the bone-related disorder is chronic renal failure.

62. (New) The method of claim 25, wherein the bone-related disorder is Cushing's syndrome.

63. (New) The method of claim 25, wherein the bone-related disorder is an osteogenic cancer.

64. (New) The method of claim 25, wherein the bone-related disorder is a non-osteogenic cancer that has metastasized to bone tissue.

27. (Amended) The method of claim 25, wherein the biologically active MRR protein has the amino acid sequence SEQ ID NO: 1.

28. (Amended) The method of claim 25, wherein the activity is a proteolytic activity.

42. (New) The method of claim 25, wherein the activity is a pore-modulating activity.

43. (New) The method of claim 25, wherein the activity is an enzyme-modulating activity.

44. (New) The method of claim 25, wherein the activity is a gene transcription-modulating activity.

29. The method of claim 25, wherein the cell is an animal cell.

30. The method of claim 29, wherein the cell is a bone cell.

31. (Amended) The method of claim 30, wherein the cell is a human cell.

45. (New) The method of claim 30, wherein the cell is a mouse cell.

46. (New) The method of claim 30, wherein the cell is a rat cell.

37. (Amended) A method of determining the propensity of a test compound to induce a bone-related disorder in a human patient, the method comprising:

maintaining a cell which comprises a biologically active MRR protein in the presence of the test composition and

comparing i) an activity of the MRR protein of the cell maintained in the presence of the test composition and
ii) the same activity of the MRR protein of a cell of the same type maintained in the absence of the test composition,

wherein a difference between
i) an activity of the MRR protein of the cell maintained in the presence of the test composition and
ii) the same activity of the MRR protein of the cell of the same type maintained in the absence of the test composition
is an indication that the test composition is likely to induce the bone-related disorder in a human patient.

38. (Amended) The method of claim 37, wherein the bone-related disorder is osteoporosis.

65. (New) The method of claim 37, wherein the bone-related disorder is Paget's disease.

66. (New) The method of claim 37, wherein the bone-related disorder is hyperthyroidism.

67. (New) The method of claim 37, wherein the bone-related disorder is hyperparathyroidism.

68. (New) The method of claim 37, wherein the bone-related disorder is osteomalacia.

69. (New) The method of claim 37, wherein the bone-related disorder is chronic renal failure.

70. (New) The method of claim 37, wherein the bone-related disorder is Cushing's syndrome.

71. (New) The method of claim 37, wherein the bone-related disorder is an osteogenic cancer.

72. (New) The method of claim 37, wherein the bone-related disorder is a non-osteogenic cancer that has metastasized to bone tissue.

47. (New) The method of claim 37, wherein the biologically active MRR protein has the amino acid sequence SEQ ID NO: 1.

48. (New) The method of claim 37, wherein the activity is a proteolytic activity.

49. (New) The method of claim 37, wherein the activity is a pore-modulating activity.

50. (New) The method of claim 37, wherein the activity is an enzyme-modulating activity.

51. (New) The method of claim 37, wherein the activity is a gene transcription-modulating activity.

52. (New) The method of claim 37, wherein the cell is an animal cell.

53. (New) The method of claim 52, wherein the cell is a bone cell.

54. (New) The method of claim 53, wherein the cell is a human cell.

55. (New) The method of claim 53, wherein the cell is a mouse cell.

56. (New) The method of claim 53, wherein the cell is a rat cell.